This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-16 Canceled

17. (Currently Amended) A method of varying [[the]] a transmission ratio between [[the]] a first motor and [[the]] an output shaft using a second motor, comprising the steps of:

providing a first motor, a second motor, an output shaft and a planetary gear set including a ring gear, a sun gear and a carrier which supports at least one planet gear;

coupling the first motor, the second motor, and the output shaft each to one of the ring gear, sun gear and carrier;

producing a rotary output at the output shaft, wherein the transmission ratio between the first motor and the output shaft is varied by varying the speed of the second motor, wherein the speed of the output shaft increases when the speed of the second motor increases and the speed of the first motor is held constant, the producing step being carried out by varying the rotating speed of the second motor so that the first motor operates at a speed within the desired performance range, the producing step also being carried out with the desired performance range being a range of less than 2000 rpm for the first motor while the power output increases 50% of a peak power output..

18. Canceled

19. (Original) The method of claim 17, wherein:

the producing step is carried out with the transmission ratio being controlled by the second motor based upon an output torque demand on the engine.

20. (Original) The method of claim 17, wherein:

the providing step is carried out with the first motor being a heat engine and the second motor is an electric motor.

21. (Original) The method of claim 20, wherein:

the providing step is carried out with the heat engine being an internal combustion engine.

22. (Withdrawn) The method of claim 17, wherein:

the providing step is carried out with the first motor being coupled to the sun gear, the second motor being coupled to the ring gear, and the output shaft being coupled to the carrier.

23. (Original) The method of claim 17, wherein:

the providing step is carried out with the first motor being coupled to the sun gear, the second motor being coupled to the carrier and the output shaft being coupled to the ring gear.

24. (Previously amended) The method of claim 17, wherein:

the providing step is carried out with a synchronizer for synchronizing the rotation of the first motor and the output shaft.

25. (Original) The method of claim 24, further comprising the step of:

synchronizing the rotation of the first motor, second motor and output shaft using the synchronizer.

26. (Original) The method of claim 17, wherein:

the producing step is carried out in a manner which operates the first motor within a desired performance range by varying the transmission ratio between the first motor and the output shaft.

27. Canceled

28. Canceled

29. (Currently Amended) The method of claim[[27]] 17, wherein:

the producing step is carried out with the desired performance range being a range of less than 1000 rpm for the first motor while the power output increases 50% of a peak power output.

30. (Original) The method of claim 17, wherein:

the producing step is carried out by combining a power of the first motor with a power of the second motor when the output shaft is initially not rotating.

31. (Currently Amended) ~~The method of claim 17, further comprising the step of:~~A method of varying a transmission ratio between a first motor and an output shaft using a second motor, comprising the steps of:

providing a first motor, a second motor, an output shaft and a planetary gear set including a ring gear, a sun gear and a carrier which supports at least one planet gear;

coupling the first motor, the second motor, and the output shaft each to one of the ring gear, sun gear and carrier;

producing a rotary output at the output shaft, wherein the transmission ratio between the first motor and the output shaft is varied by varying the speed of the second motor, wherein the speed of the output shaft increases when the speed of the second motor increases and the speed of the first motor is held constant; and

stopping the second motor to provide a fixed speed ratio between the first motor and the output shaft during a second mode of operation;

the producing step being carried out to vary the transmission ratio during a first mode of operation.

32. (Currently amended) The method of claim 17, further comprising:

synchronizing rotation of the first motor and the output shaft, wherein a power of the first motor is combined serially with the power of the second motor to provide power to the output shaft.

33. (Original) The method of claim 17, further comprising the step of:

generating electrical energy with the second motor, the second motor being an electrical motor;

storing the electrical energy in a power storage device.

Claims 34-52 Canceled

53. (Previously amended) A method of combining the power of a first motor and a second motor, comprising the steps of:

providing an output shaft, a first motor, a second motor, a synchronizer, and a planetary gear set having a ring gear, a sun gear and a carrier having at least one planet gear, the first motor, second motor and output shaft being coupled to at least one of the ring gear, sun gear and carrier, the synchronizer synchronizing the rotation of the first motor and the output shaft;

varying the transmission ratio between the first motor and the output shaft by varying the speed of the second motor in a first mode of operation, wherein the speed of the output shaft increases when the speed of the second motor is increased while the speed of the first motor is constant; and

synchronizing the rotation of the first motor, second motor and output shaft using the synchronizer in a second mode of operation.

54. (Original) The method of claim 53, wherein:

the producing step is carried out with the transmission ratio being controlled by the second motor based upon an output torque demand.

55. (Original) The method of claim 53, wherein:

the providing step is carried out with the first motor being a heat engine and the second motor is an electric motor.

56. (Original) The method of claim 55, wherein:

the providing step is carried out with the heat engine being an internal combustion engine.

57. (Withdrawn) The method of claim 53, wherein:

the providing step is carried out with the first motor being coupled to the sun gear, the second motor being coupled to the ring gear, and the output shaft being coupled to the carrier.

58. (Original) The method of claim 53, wherein:

the providing step is carried out with the first motor being coupled to the sun gear, the second motor being coupled to the carrier and the output shaft being coupled to the ring gear.

Claims 59-60 Canceled

61. (Original) The method of claim 53, wherein:

the producing step is carried out in a manner which operates the first motor within a desired performance range by varying the transmission ratio between the first motor and the output shaft.

62. (Original) The method of claim 53, wherein:

the producing step is carried out by varying the rotating speed of the second motor so that the first motor operates at a speed within the desired performance range.

63. (Original) The method of claim 62, wherein:

the producing step is carried out with the desired performance range being a range of less than 2000 rpm for the first motor while the power output increases 50% of a peak power output.

64. (Original) The method of claim 62, wherein:

the producing step is carried out with the desired performance range being a range of less than 1000 rpm for the first motor while the power output increases 50% of a peak power output.

65. (Original) The method of claim 53, wherein:

the producing step is carried out by combining a power of the first motor with a power of the second motor when the output shaft is initially not rotating.

66. (Original) The method of claim 53, further comprising the step of:

stopping the second motor to provide a fixed speed ratio between the first motor and the output shaft.

Claims 67-95 Canceled

96. (Currently Amended) A method of varying [[the]] a transmission ratio between [[the]] a first motor and [[the]] an output shaft using a second motor, comprising the steps of:

providing a first motor, a second motor, an output shaft and a planetary gear set including a ring gear, a sun gear and a carrier which supports at least one planet gear;

coupling the first motor, the second motor, and the output shaft each to one of the ring gear, sun gear and carrier;

producing rotary output at the output shaft in a first mode of operation and in a second mode of operation, the transmission ratio between the first motor and the output shaft being varied by varying the speed of the second motor in the first mode of

operation, the second motor being stopped to provide a fixed speed ratio between the first motor and the output shaft when in the second mode of operation.

97. (Previously presented) The method of claim 96, wherein:

the producing step is carried out with the speed of the output shaft increasing when the speed of the second motor increases and the speed of the first motor is held constant

98. (Previously presented) The method of claim 96, wherein:

the producing step is carried out with the transmission ratio being controlled by the second motor based upon an output torque demand on the engine when in the first mode of operation.

99. (Previously presented) The method of claim 96, wherein:

the providing step is carried out with the first motor being a heat engine and the second motor is an electric motor.

100. (Previously presented) The method of claim 96, wherein:

the providing step is carried out with the first motor being coupled to the sun gear, the second motor being coupled to the carrier and the output shaft being coupled to the ring gear.

101. (Previously presented) The method of claim 96, further comprising:

the providing step is carried out with a synchronizer for synchronizing the rotation of the first motor and the output shaft.

102. (Previously presented) The method of claim 96, further comprising the step of:

synchronizing the rotation of the first motor, second motor and output shaft using the synchronizer.

103. (Previously presented) The method of claim 96, wherein:

the producing step is carried out in a manner which operates the first motor within a desired performance range by varying the transmission ratio between the first motor and the output shaft in the first mode of operation.

104. (Previously presented) The method of claim 96, wherein:

the producing step is carried out by varying the rotating speed of the second motor so that the first motor operates at a speed within the desired performance range in the first mode of operation.

105. (Previously presented) The method of claim 104, wherein:

the producing step is carried out with the desired performance range being a range of less than 2000 rpm for the first motor while the power output increases 50% of a peak power output.

106. (Previously presented) The method of claim 104, wherein:

the producing step is carried out with the desired performance range being a range of less than 1000 rpm for the first motor while the power output increases 50% of a peak power output.

107. (Previously presented) The method of claim 96, wherein:

the producing step is carried out by combining a power of the first motor with a power of the second motor when the output shaft is initially not rotating.

108. (Previously presented) The method of claim 96, further comprising:

synchronizing rotation of first motor and the output shaft, wherein a power of the first motor is combined serially with the power of the second motor to provide power to the output shaft.

109. (Previously presented) The method of claim 96, further comprising the step of:

generating electrical energy with the second motor, the second motor being an electrical motor;

storing the electrical energy in a power storage device.

110. (Previously presented) A method of combining the power of a first motor and a second motor, comprising the steps of:

providing an output shaft, a first motor, a second motor, and a planetary gear set having a ring gear, a sun gear and a carrier having at least one planet gear, the first motor, the second motor and the output shaft each being coupled to at least one of the ring gear, sun gear and carrier;

varying the transmission ratio between the first motor and the output shaft by varying the speed of the second motor when in a first mode of operation, wherein the speed of the output shaft increases when the speed of the second motor is increased and the speed of the first motor is constant; and

stopping the second motor to provide a fixed speed ratio between the first motor and the output shaft in a second mode of operation.

111. (Previously presented) The method of claim 110, wherein:

the producing step is carried out with the transmission ratio being controlled by the second motor based upon an output torque demand when in the first mode of operation

112. (Previously presented) The method of claim 110, wherein:

the providing step is carried out with the first motor being a heat engine and the second motor is an electric motor.

113. (Previously presented) The method of claim 110, wherein:

the providing step is carried out with the first motor being coupled to the sun gear, the second motor being coupled to the carrier and the output shaft being coupled to the ring gear.

114. (Previously presented) The method of claim 110, wherein:

the providing step is carried out with a synchronizer for synchronizing the rotation of the first motor and the output shaft.

115. (Previously presented) The method of claim 114, further comprising the step of:

synchronizing the rotation of the first motor, second motor and output shaft using the synchronizer.

116. (Previously presented) The method of claim 110, wherein:

the producing step is carried out in a manner which operates the first motor within a desired performance range by varying the transmission ratio between the first motor and the output shaft in the first mode of operation.

117. (Previously presented) The method of claim 110, wherein:

the producing step is carried out by varying the rotating speed of the second motor so that the first motor operates at a speed within the desired performance range in the first mode of operation.

118. (Previously presented) The method of claim 117, wherein:

the producing step is carried out with the desired performance range being a range of less than 2000 rpm for the first motor while the power output increases 50% of a peak power output.

119. (Previously presented) The method of claim 117, wherein:

the producing step is carried out with the desired performance range being a range of less than 1000 rpm for the first motor while the power output increases 50% of a peak power output.

120. (Previously presented) The method of claim 110, wherein:

the producing step is carried out by combining a power of the first motor with a power of the second motor when the output shaft is initially not rotating.